

Tronox Joint Agency Meeting – Notes
Thursday, October 20, 2016 8:00 a.m. – 5:00 p.m.
BIA Building, 133 BIA 1, 1001 Indian School RD NW, Albuquerque, NM

Overall Outcomes for this meeting:

- 1) Continue our shared vision efforts and continue to build our Tronox joint agency working team;
- 2) Present a general Tronox project update;
- 3) Review Tronox project timelines;
- 4) Provide an update on Navajo Nation workforce development and contracting; and
- 5) Finalize Tronox FY17 proposed projects.



Summary

Approximately 50 people gathered on October 20, 2016 in Albuquerque for the Tronox Joint Agency meeting. The focus was on sharing current project statuses and identifying key activities; reviewing project timelines; providing an update on Navajo Nation workforce development and contracting; and finalizing Tronox FY17 proposed projects.

Action Items Identified During the Meeting

What	Who	By When	Status
1. Follow up on closing the Isabella Mine shaft that is open including looking into whether Tronox funds can be used to close it	U.S. EPA Region 9	Ongoing	
2. Send out an outline of the PMP with the meeting notes for the group to review	Chip	ASAP	Complete

What	Who	By When	Status
3. Update the group on PMP progress	Sona C./Sean H.	Next meeting	
4. Review the FY2017 Proposed Project slides and if you have any comments or questions, submit them to Chip	All	11/3/16 extended to 11/18/16	Complete
5. Start thinking about projects for FY18 and beyond and submit them to Chip	All	ASAP	
6. For each site cleanup, take before and after photos and collect basic statistics such as volume of waste cleaned up and cost and submit to Chip for inclusion on the website	All	Ongoing	
7. Consider lessons learned after the completion of each project	All	Ongoing	
8. Resend the data portal alpha email checklist	Randy	ASAP	
9. Start using the alpha version of the data portal and report bugs and feature needs	All	Ongoing	

Bike Rack

Possible topics for our next meeting in FY17 Quarter 2

- Update on PMP progress.

Comments

The next Tronox Joint Agency meeting will be the week of February 27, 2017.

Thursday, October 20, 2016 8:00 a.m. - 5 p.m.

Opening – Bruce Engelbert (Skeo)

The meeting opened with introductions from the participants (see attached sign-in sheet) and welcoming comments from Dr. Benn (Navajo Nation EPA), Ben Banipal (U.S. EPA Region 6), Clancy Tenley (U.S. EPA Region 9), Kurt Vollbrecht (NMED) and Diane Malone (Navajo Nation EPA). Bruce Engelbert, the meeting facilitator, reviewed the meeting agenda and logistics. Chip Poalinelli stated that there were no incomplete action items from the June meeting.

Spencer Mine Case Study – James Smith (New Mexico Mining and Minerals Department)

James Smith, Coal Mine Reclamation Program Manager in the New Mexico Mining and Minerals Department, presented information on the reclamation of the Spencer Mine north of Grants, New Mexico. (Please see PowerPoint slide file for presentation details— 2016 Spencer Mine Presentation).



General Comments and Questions

- Was there remediation under CERCLA or was work strictly reclamation? James responded that this was a BLM funded project. BLM did not do a CERCLA removal, it was just reclamation.
- How did you select what to put inside the containment cell versus what was buried? James responded that they had distinct waste piles that were moved to the repository. They dug down until they got to the native soil, then they came in with a Geiger counter. Most of the materials were shaft development materials and did not have very high readings. There were no ore or mill materials.
- What was the total cost of the project? James responded that the total cost was \$563,000, but the original bid was \$493,000.
- One of the lessons learned on this project is that we need to be careful doing volume estimates on waste.
- Who provided the expertise on what vegetation would be most resistant to erosion and what was the best way to revegetate? James responded that they used an engineering firm that employed a BLM seed mix that had low palatability for cows.
- Michele noted that James was able to fence off another open shaft about ¼ mile north of the site while working on the Spencer site. Linda requested that this open shaft be looked into by U.S. EPA Region 9. It's called Isabella. Michele noted that Isabella is not a Kerr McGee mine, but is curious if there is comingling of water underground, could Tronox be used to close up the shaft at Isabella?
- How are the rock sills oriented? James responded that the rock sills are perpendicular to what they expect the flow to be. The goal is to capture all of the flow.
- How do the gully plugs line up with sills? James responded that they are directly below the sills in the area of erosion. The native ground is less likely to erode.
- From where did the clean cover material come? James responded that they came from two places nearby.
- Where there any soil amendments? James responded that there was fertilizer, proteins, wood mulch and seed.
- Was there any rock in the top six inches for erosion control? James responded no.

- What was the total time from characterization of the problem to completion of response? James responded that their first visit was in 2007. They started working on the design in 2013. They finished seeding and mulching in 2016. They had to go through the NEPA process.
- Are there ICs at this site? James responded that there is fencing.
- How much ore was produced at this mine? James responded that mining took place from 1958 to 1980. Ore production was 47,000-48,000 short tons.
- What did you do with the vent shafts? James responded that they plugged them.
- How are you going to handle long-term maintenance? James responded that it will be taken care of by the NNAML program and that he doesn't expect there to be any problems.
- Did you consider looking at underlying karst formations? Could there be uranium dissolving into the water? James responded that their main concern was to stop water from entering the underground workings. They have not planned for future follow up on water that may have gotten in there before reclamation.
- What would be the normal schedule for visiting to determine if maintenance is needed for the cover? James responded that they would visit whenever people are in the area, but at least annually.
- Is this a Tronox mine? James responded yes.
- NNAML shared that they often need to re-evaluate volume estimates after moving some earth. They also work with native species when reseeding. When considering how soil will erode, they evaluate how the water is going to move and work with what's available in terms of rocks to slow erosion. They take a practical approach and work with it as best they can.
- Is the Spencer Mine one of the 50 Tronox mines? James responded yes. The reclamation was funded by BLM and any additional work will be funded by Tronox.
- Are there underground mine workings and any vent holes? James responded that all of them on the BLM property are plugged.
- How far is this site from Navajo Nation? James responded that it is one to two miles away.
- Is there any subsidence on or around this site? James responded no.
- How did you get water for dust control? James responded that getting water is not easy in that area. Their contractor requested that Rio Algom provide it, but Rio Algom said they needed it for their own work. James' contractor ultimately rented a water truck and filled it from fire hydrants in City of Milan.
- What was the determination for the repository location? James answered that they put the waste where the erosion had been.
- Where is the flow of water now moving? James responded that it is flowing above the repository and that he is 100 percent confident that water will not flow into the repository area and move uranium out.
- As a clarification on the Isabella Mine area, there are a couple of shafts there. The main shaft was backfilled and you can still find a steel cover on it. This is on private ranch land. There is an open shaft up higher with the fence around it that is on allotment land.
- Was Isabella listed as a wet mine? Do we have open vent shafts? James responded that at this point they cannot go to the bottom to look for water.
- Topographically, where is the water flowing with respect to Navajo Nation? James responded that the water flows east/southeast. Navajo Nation is a mile or two to the west.

- Freida expressed an interest in collecting water samples to see what the concentrations are. She is concerned that groundwater might be flowing in the opposite direction of the surface water and the groundwater may be contaminated.

General Tronox Project Update – Chip Poalinelli (U.S. EPA Region 9)

Chip Poalinelli provided a status update of the Program Management Plan (Please see PowerPoint slide file for presentation details Opening - Action Items #1.pdf).

Action Items from this Update

- Chip will send out an outline of the PMP with the meeting notes for people to review.
- Chip will update the group at the next meeting on PMP progress.

Workforce Development, Cooperative Agreements, and Contracting – Elena Neibaur, Andrea Manion, Autumn Roe (U.S. EPA Region 9)

Elena Neibaur provided a workforce development update, Andrea Manion provided an update on the Diné College Cooperative Agreement, and Autumn Roe provided an update on contracting and acquisition strategy.

General Comments

- If anyone wants to advertise jobs, please contact Roberta Tohannie at Northern Arizona University (roberta.tohannie@nau.edu) (928) 523-2082)
- There is also a U.S. EPA website with information on community involvement opportunities and grants: www.epa.gov/navajo-nation-uranium-cleanup

Navajo Nation EPA Update – Freida White (Navajo Nation EPA)

Freida White provided a Navajo Nation EPA update (Please see PowerPoint slide file for presentation details Navajo updates.pdf).



Navajo Nation AML Update – Madeline Roanhorse (Navajo Nation AML)

Madeline Roanhorse provided a Navajo Nation AML update. She stated that AML focuses on coal reclamation projects for the most part, but is looking forward to being involved more with the uranium cleanups. AML has been doing a lot of community outreach recently. AML appreciates U.S. EPA Region 6 and 9 staff for coming out to support AML's recent community fairs. There was a big grant signing ceremony yesterday that the Navajo Nation President attended.



FY 2017 Proposed Projects – Chip Poalinelli (U.S. EPA Region 9)

Chip Poalinelli provided an overview of the FY2017 Project Approval Process along with FY2017 Proposed Projects for both U.S. EPA Region 9 and Region 6 (Please see PowerPoint slide file for presentation details Opening - Action Items #1.pdf).



General Comments

- When talking about Tronox sites to the general public, it would be helpful to have before and after cleanup photos as well as some basic statistics on volume of waste cleaned up and the cost. Chip and Elena can get the photos posted on a website so the group has access to them. It might be useful to have the photos posted on the timelines for each site as well.

- When cleaning up these mines it would be helpful to track lessons learned to help us in the future.
- The amounts budgeted and the amounts spent on each project will be in the quarterly and annual reports.



Action Items from this Update

- Review the slides with the FY17 projects and if you have any comments or questions, submit them to Chip within two weeks (November 3, 2016).
- Start thinking about projects for FY18 and beyond and submit them to Chip as soon as possible.

Flyover of Site Near Tohajiilee – Kevin Shade (U.S. EPA Region 6)

Kevin Shade briefly presented on how he used an ASPECT plane to check in on an area suspected of having uranium contamination near Tohajiilee. He did this while investigating another Superfund site and his contractors were willing to do the flyover for free. He found two hot spots: the actual mine and another location where some lagoons might have been. He doesn't believe there is an adverse impact on the Tohajiilee community. There is an incomplete fence so Kevin is concerned about access control. There is some evidence of people going towards the mine. U.S. EPA Region 6 is going to work with BLM to get a complete fence up and around the site. Kevin is working on a fact sheet for Tohajiilee. Ben Banipal recognized Kevin for thinking outside of the box to get this work done for free.



Project Updates – U.S. EPA Region 9 and Region 6 Staff

Former Cove Transfer Station – Chip Poalinelli presented on recent work by U.S. EPA Region 9 to mitigate surface erosion at the former transfer area located in Cove (Please see PowerPoint slide file for presentation details Cover Transfer Station October 20 #3.pdf).



General Comments and Clarifications

- It was the original cap that was eroding, not any contaminated material.
- The cover soil was purchased in Farmington and then fertilizer and organic material were added to it.
- Community members did not mind the rip rap channels because they looked so much better than the erosion. The community was excited that this was happening. Vegetation will eventually cover up the rip rap channels when it grows in.
- There were two Navajo crew members working full time on this site.

Former Cove Transfer Station – Gaelle Glickfield presented on the Cove Wash Watershed Assessment, the Cove Conceptual Site Model and the Cove Livestock Study (Please see PowerPoint slide file for presentation details FY17Q1 Quarterly Cove briefing v 1 #4.pdf).



General Comments and Questions

- The primary concern with the watershed assessment is that the Cove wash is contaminated and citizens are diverting it to irrigate.
- Gaelle is sampling plants being grown on site and is also growing for some plants in the lab in soil from the site for sampling.
- Body burden, which is the amount of contamination in an entire organism, is being measured.
- They are also looking at invertebrates in the wash.
- They will do a risk assessment based on the farm plot studies.
- The Conceptual Site Model should be completed by the last quarter of FY17.
- The community really wants the livestock study as there are lots of sheep out there grazing on mesas and drinking from wash waters.
- A current issue is figuring out how to award this work. It needs to be tied to Tronox and the mine cleanup.

Cove Chapter Community Involvement – Secody Hubbard presented on the Cove Chapter Community Involvement (Please see PowerPoint slide file for presentation details Cove CI Presentation for October 2016 Quarterly_Hubbard4 #2.pdf).



General Comments and Questions

- Livestock is very important to the culture of the Navajo people.
- A key to community involvement is being there consistently. It helps us to gain trust.
- There was a question about the results of water sampling done in Cove in 2015. There is a fact sheet about that available at: https://www.epa.gov/sites/production/files/2016-09/documents/cove_wash_sampling_preliminary_findings_summary_-_march_2016.pdf
- One of the major concerns is that uranium concentrations are high especially in the Mesa 2 area.

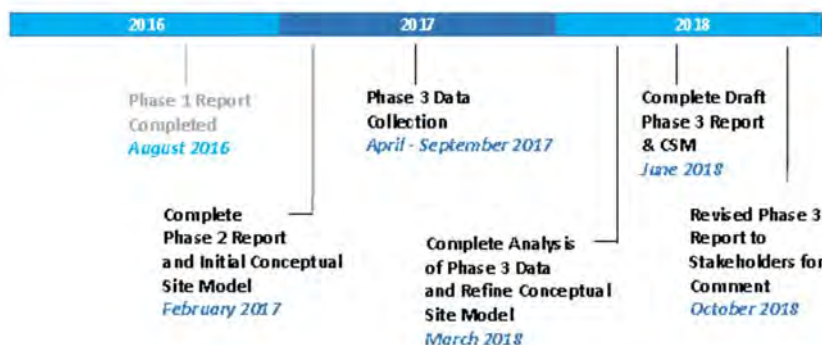
Eastern Agency (Phase 1 Groundwater Study) – Mark Purcell presented on the groundwater investigation at the San Mateo Creek Basin Uranium Legacy Site in the Ambrosia Lake area (Please see PowerPoint slide file for presentation details Tronox Qtr. – October 2016 - Final).



General Comments and Questions

- Some of the wells used for sampling were pre-existing and some were installed as part of the program.
- The wells put in by Homestake used water from the San Andreas which is pretty clean. Contamination may have already passed through, however.
- The alluvium is a few feet deep to a little over 100 feet deep.
- The mine was a wet mine and it was dewatered and the water went into the arroyos. Some went down to saturate the alluvial sediments at the base of the alluvium.
- There are some areas of poor water quality.
- Up to 482 tons of uranium has been lost at this one mine site.
- No other types of mining have occurred in the San Mateo basin so only uranium mining could have contributed to contamination.
- The surface water leaves the basin and goes south and east away from the reservation. Some residual mine waters are probably seeping into the bedrock formations. If they get into bedrock, they will probably move to the north towards the reservation.
- One area of concern is the deposition of constituents as they precipitate out of solution.

PLANNED ACTIVITIES FOR GROUND WATER INVESTIGATION



Eastern Agency (Ambrosia Lake) – Warren Zehner presented on the surface and near surface radiological assessment at the Tronox mine sites in the Ambrosia Lake Sub-District (Please see PowerPoint slide file for presentation details ALSD October 2016 Quarterly_wzv2 #6).



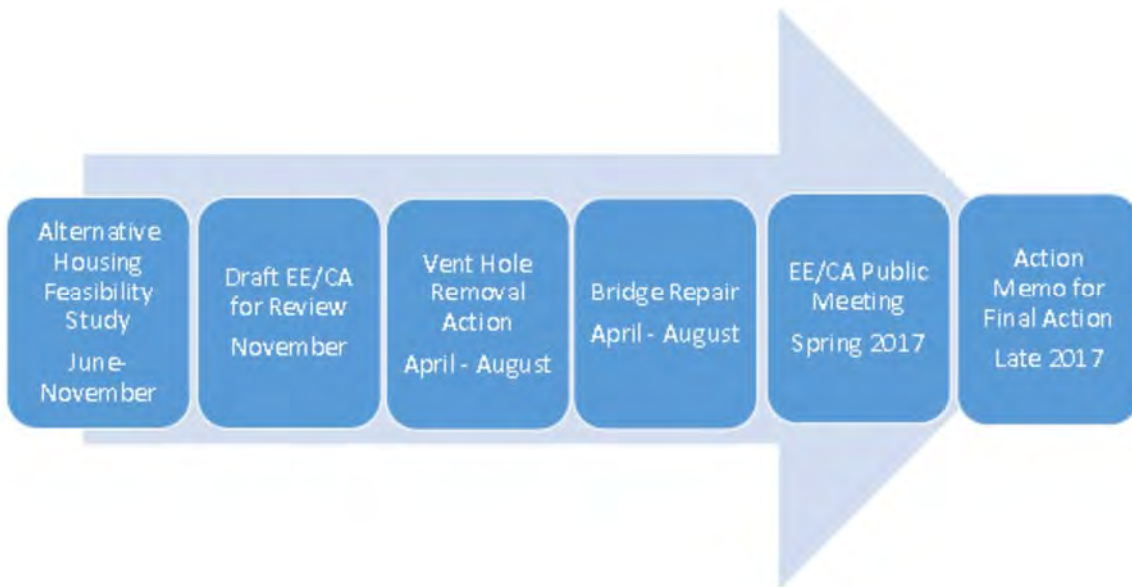
General Comments and Questions

- EPA Region 6 and EPA Region 9 are keeping their EE/CA styles the same for ease of review and understanding to the general public.
- The RI/FS will be completed at the end of the month. Warren used an interim status report to develop the EE/CA approval memo.
- Warren will have the EE/CA for everyone to review after it goes through the Remedy Review Board.
- Dr. Benn expressed appreciation for Warren really connecting with the Navajo people who live near Ambrosia Lake. He starts off his presentations at Chapter houses by talking about the Navajo people in a positive way before going into the data. This works well for the Navajo people.

Eastern Agency (Quivira Mines) – Mark Ripperda presented on accomplishments, upcoming activities, opportunities for engagement and Navajo workforce development highlights related to the Quivira Mine site (Please see PowerPoint slide file for presentation details Quivira Quarterly 10.10 #7).

General Comments and Questions

- Mark also has to get the EE/CA reviewed by the National Remedy Review Board. The state and tribe need to be present for the Review Board meeting. Prior to that Mark will share a briefing packet with the Tronox group. Comments on the EE/CA can be shared with the Review Board. Mark is hoping that he and Warren can do back to back reviews but it's going to add five months to both of their EE/CA timelines.
- Dr. Benn made a request to see before and after concentration numbers on maps. That's something the Navajo people would be interested in seeing because it quickly shows cleanup progress.



Data Portal Update – Randy Nattis presented an update on the Data Portal using the live portal website at <http://r9.ercloud.org/TLCPortal/>.



General Comments and Questions

- Randy would like people to try out the portal and provide feedback to the developer. So far, not very many people have tried it out. Randy will resend the data portal alpha email checklist.
- Anyone can upload data, but there will be a “guardian of the data” who will format it to make sure we are comparing apples to apples within the database.
- The portal works on mobile phones as well as computers so it can be used in the field.
- You can also use it to navigate yourself to a particular sampling location.
- Over time you will be able to see changes in concentrations over time at the same sampling locations.

- The portal will house the data but it will be backed up in the SCRIBE database. Anything added to the portal is tied to the user.
- Randy will soon be moving from Region 9 to Region 10. Many expressed their appreciation for Randy and his work. He was unusually adept at gaining the trust of and working with the Navajo people.
- Eric Delgado will be the new technical lead on the portal.

Closing and Next Steps - Facilitator/All

- Reviewed action items
- Next meeting the week of February 27, 2016
- Closing comments

TRONOX JOINT AGENCY MEETING

THURSDAY, OCTOBER 20, 2016

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